

Claims

- [c1] 1. A color filter, comprising:
a substrate, having a display area and a non-display area;
a black matrix, disposed on the substrate, wherein the black matrix defines the display area into a plurality of sub-pixel areas, and the black matrix covers the non-display area, which forms an edge of the display area;
a plurality of color filter units, disposed in the sub-pixel areas; and
a light shielding layer, disposed over the black matrix.
- [c2] 2. The color filter of claim 1, wherein the light shielding layer comprises a red photoresist layer, a green photoresist layer and a blue photoresist layer.
- [c3] 3. The color filter of claim 1, wherein further comprises:
a plurality of alignment bump, disposed over the color filter units and the black matrix when the color filter is provided for a multi-domain vertical alignment (MVA) liquid crystal display panel.
- [c4] 4. The color filter of claim 3, wherein the light shielding layer and the alignment bump are comprised of similar

material.

- [c5] 5. The color filter of claim 1, wherein the black matrix comprises a black resin.
- [c6] 6. The color filter of claim 1, wherein the color filter units comprise a plurality of red filter units, a plurality of green filter units and a plurality of blue filter units.
- [c7] 7. A process of forming a color filter, comprising:
providing a substrate having a display area and a non-display area;
forming a black matrix over the substrate, wherein the black matrix defines the display area into a plurality of first sub-pixel areas, a plurality of second sub-pixel areas and a plurality of third sub-pixel areas, and the black matrix covers the non-display area, which forms an edge of the display area;
simultaneously forming a first color filter unit in each of the first sub-pixel areas, and forming a first light shielding layer over the black matrix;
forming a second color filter unit in each of the second sub-pixel areas; and
forming a third color filter unit in each of the third sub-pixel areas.
- [c8] 8. The process of claim 7, further comprising:

forming a second light shielding layer over the first light shielding layer as the second color filter unit is formed.

[c9] 9. The process of claim 8, further comprising:
forming a third light shielding layer over the second light shielding layer as the third color filter unit is formed.

[c10] 10. The process of claim 7, further comprising:
forming a plurality of alignment bumps over the black matrix, the first color filter unit, the second color filter unit and the third color filter unit after the third color filter unit is formed.

[c11] 11. A process of forming a color filter, suitable for a multi-domain vertical alignment (MVA) liquid crystal display panel, the process comprising:
providing a substrate comprising a display area and a non-display area;
forming a black matrix over the substrate, wherein the black matrix defines the display area into a plurality of first sub-pixel areas, a plurality of second sub-pixel areas and a plurality of third sub-pixel areas, and the black matrix covers the non-display area, which forms an edge of the display area;
forming a first color filter unit in each of the first sub-pixel areas;
forming a second color filter unit in each of the second

sub-pixel areas;
forming a third color filter unit in each of the third sub-pixel areas;
forming a plurality of alignment bumps over the black matrix, the first color filter unit, the second color filter unit and the third color filter unit; and
simultaneously forming a first light shielding layer over the black matrix .

[c12] 12. The process of claim 11, further comprising:
forming a second light shielding layer over the black matrix as the first color filter unit is formed, wherein the first light shielding layer covers the second light shielding layer.

[c13] 13. The process of claim 12, further comprising:
forming a third light shielding layer over the second light shielding layer as the second color filter unit is formed, wherein the first light shielding layer covers the third light shielding layer.

[c14] 14. The manufacturing method of claim 13, further comprising:
forming a fourth light shielding layer over the third light shielding layer as the third color filter unit is formed, wherein the first light shielding layer covers the fourth light shielding layer.

